

A CONSPECTUS OF THE GENUS LILIUM.

F. A. WAUGH.

(WITH FIGURES I-14)

[Concluded from p. 254.]

28. *L. OXYPETALUM* Baker, Linn. Soc. Jour. **14**: 234. 1874.

Fritillaria oxypetala Royle, Ill. Bot. Him. **1**. 388?. 1839.

Bulb oblong, with few lanceolate acuminate scales: stem slender, 3-4.5^{dm} tall: leaves 20-30, scattered, ascending, lanceolate or linear: perianth horizontal, wide funnel-shaped, 2.5-4^{cm} long, with oblong, acute segments, purplish tinged beneath with green, and dotted on the inner half of the upper surface, thickly papillose toward the center: stamens less than one third the length of the perianth; anthers purplish; filaments divergent: ovary clavate; style straight, shorter than the ovary.

Western Himalayas.

29. *L. PAPILLIFERUM* Franchet, Jour. Bot. **6**: 316. 1892.

Bulb small subglobose, with 10-12 thick ovate scales, closely imbricated: stem nearly 3^{dm} in height, densely clothed with short hairs, leafless for a considerable distance at the base: leaves scattered, the lower oblong-obtuse, the upper only half as large, linear, acute, all of them about 5-nerved, scabrous along nerves and margins: flowers one or two, nodding at the beginning of the summer, and becoming horizontal; perianth small, 5-6^{cm}, dirty red, short tubular at the lower part, with the segments subrevolute: filaments divergent, with anthers yellow: style a little longer than the ovary.

Yun-nan, China.

30. *L. HENRYI* Baker, Gard. Chron. III. **4**: 660. 1888.

Bulb globose, 5^{cm} in diam., outer scales ovate, fleshy: stem 6-10^{dm} long below the inflorescence: leaves sessile, spreading, continued up to the very top; fully developed leaves lanceolate,

[MAY

15-20 long, upper gradually smaller, uppermost ovate: inflorescence a lax corymb of 4-8 flowers, bracteate at base by a whorl of small ovate leaves: perianth yellow, 7.5-9^{cm} long; segments lanceolate, subobtuse, spreading from the middle, marked in the lower half with a few irregularly scattered brown spots: stamens equal the perianth segments; anthers linear: ovary subcylindric, 2.5^{cm} long; capsule oblong, obtusely angled.

Ichang, western China. Just coming into cultivation. Extremely thrifty and fine.



FIG. 6.—*Lilium Henryi*.



FIG. 7.—*Lilium auratum*.

31. *L. AURATUM* Lindl. Gard. Chron. 1862:640. July 12.

L. Dexteri Hovey, Mag. Hort. 1862:380.

L. Wittei Suring. in Koch, Wochens. 1867:294.

L. speciosum imperiale hort. Siebold in Baker, Linn. Soc. Jour. 14:235. 1874.

Bulb like *L. speciosum*: stem 6–12^{dm} high: leaves 20–30, scattered, very short petioled, glabrous, 5-nerved: flowers in a deltoid raceme with divaricate bracteolate pedicels; perianth large, wide-spreading, with segments much reflexed and somewhat twisted, white, more or less marked with bands of yellow and spots of purple, strongly papillose: anthers narrow; pollen red.

Several garden varieties have been described with botanical names. The most common have been included in the synonymy above. None deserves to rank as a botanical variety.

32. *L. SPECIOSUM* Thunb. Linn. Soc. Trans. 2:332. 1794.



FIG. 8.—*Lilium speciosum*.

L. superbum Thunb. Fl. Jap. 134. 1784. [non Linn.]

L. lancifolium hort. in Guill. Arch. Bot. 2:271. 1833.

L. Broussartii Morren, Acad. Roy. Brux. Mem. Feb. 1834.

L. eximium hort. in Kunth. Enum. Pl. 4:259. 1843.

L. punctatum hort. in Lem. Fl. d. Serr. I. 3:276. 1847.

L. vestale Mast. Gard. Chron. 1872:1522.

L. Tametomo Zucc. & Spae in Baker, Linn. Soc. Jour. 14:234. 1874.

L. Kratzeri Duch. in Baker. loc. cit.

L. Duchartrei.

Bulb perennial, globose, with lanceolate scales somewhat loosely imbricated: stem 6–12^{dm} high, stiff: leaves 12–20, scattered, very short petiolate, oblong lanceolate, acute or acuminate, 5–7-nerved: flowers 3–10, racemose, on divaricate, bracteate pedicels, white more or less suffused with pink and dotted with red, strongly papillose toward the center; perianth segments

ovate lanceolate, much revolute: filaments much divergent: style slender, much curved; capsule obovoid, oblong, umbilicate.

Japan. One of the commonest and very best species in cultivation.

Var. RUBRUM hort. is a fine, extra strong growing sort, with darker pinkish-red flowers, and is the best for garden culture.

Var. ALBUM hort. (*L. praecox* hort.) is white or nearly so and less thrifty.

33. *L. PUBERULUM* Duch. Soc. Hort. Par. Jour. II. 4:217. 1870.

L. Canadense puberulum Torr.
War Dept. Pac. R. R. Rpts.
4:146. part 5. 1856.

L. Californicum hort. in Duch.
Soc. Hort. Par. Jour. II. 4:216.
1870.

L. Humboldtii Roezl & Leicht. in
Duch. Soc. Hort. Par. Jour.
II. 5:43. 1871.

L. Bloomerianum Kellogg, Cal.
Acad. Proc. 4:60. 1872.

L. Bloomerianum ocellatum Kellogg, Cal. Acad. Proc. 5:88. 1872.

L. Robinsonianum hort. in Baker,
Linn. Soc. Jour. 14:244. 1874.

Bulb large, thick, oblique, perennial, not bearing rhizomes, with few scales: stem 9-15^{dm} high: leaves in 4-6 large whorls

of 10-15 leaves each, oblanceolate, acute: flowers 6-10 or more in a large panicle, on nodding divaricate pedicels; perianth 7.5-10^{cm} long, bright orange-red thickly marked with dark spots, with acute, strongly reflexed segments which are somewhat papillose at the base: style about one third the length of the ovary; capsule large, obovoid, acutely 6-angled.

California. A noble garden flower, not rare in cultivation.



FIG. 9.—*Lilium puberulum*.

34. *L. MARTAGON* Linn. Sp. Pl. 303. 1753.*L. hirsutum* Mill. Dict. n. 10. [Ed. 8.]*L. Milleri* Schultes Obs. Bot. 67.*L. verticillatum* Gilib. Exercit. 2 : 466. 1792.*L. versicolor* Salisb. Prod. 237. 1796.*L. glabrum* Spreng. Syst. 2 : 62. 1825.*L. Cattaneæ* Visiani Fl. Dalm. Suppl. 32. 1852.*L. Martagon dalmaticum* Maly. in Baker, Linn. Soc. Jour. 14 : 245. 1874.*L. Martagonum* St. Lag. Soc. Bot. Lyon Ann. 7 : 129. 1880.

Bulb perennial, ovoid, with very many narrow scales: stem 8–15^{dm} high: leaves several in 2–4-whorls of 6–9 leaves each, sometimes a few scattered or rarely all, oblanceolate, sessile, with 7–11 distinct nerves: flowers 3–20 in a long, loose, bracteate raceme, nodding, fragrant, varying in color from purple to dirty white, spotted, segments lanceolate, strongly revolute: pollen red: ovary shorter than the much curved style; capsule conical, acute angled, umbilicate.

FIG. 10.—*Lilium maculatum*.

Central and southern Europe, to Siberia and Japan. Long cultivated in gardens, especially in Europe, where it furnishes many cultural varieties.

35. *L. MACULATUM* Thunb. Linn. Soc. Trans. 2 : 334. 1794.*L. Hansonii* Leicht. in Baker, Linn. Soc. Jour. 14 : 245. 1874.

Bulb perennial, globose, compact: stem 9–12^{dm} high: leaves oblanceolate, acute, frequently in

a single whorl of 8–12 with some scattered, or sometimes several whorls: flowers 4–12 in a loose raceme, on erect-spreading pedicels, bright orange conspicuously spotted with purple on the lower half; perianth segments 2.5–5^{cm} long, thick, lanceolate,

wide spreading but scarcely revolute: anthers narrow; pollen yellow: ovary clavate, deeply furrowed.

Japan. Becoming very favorably known in cultivation.

36. *L. SUPERBUM* Linn. Sp. Pl. 434. 1762. [Ed. 2.]

L. Martagon Walt. Fl. Carol. 123. 1788.

L. Michauxii Lam. Ency. 3: 457. 1789.

L. autumnale Lodd. Bot. Cab. 4: t. 335. 1823.

L. Michauxianum Schultes f. Syst. Veg. 7: 258. 1829.

Bulb perennial, large, globose, cespitose, with numerous acute, closely imbricated scales: stem 12–18^{dm} tall, erect: leaves often in whorls, sometimes more or less scattered, 3–5-nerved: flowers 6–12 or even more, paniculate, bright reddish-orange, conspicuously spotted: perianth segments 7.5–10^{cm} long, lanceolate, acute: filaments strongly diverging; anthers red: ovary a little shorter than the curved style; capsule obovoid.

Canada to Georgia and west to the Mississippi river.

Var. *CAROLINIANUM* Chapm. Fl. S. States 484. 1860.

L. Carolinianum Michx. Fl. Bor. Am. 1: 197. 1803.

Smaller, more slender, with fewer flowers and broader leaves.

A southern variety, in dry woods, Virginia to Florida and west to Louisiana.

37. *L. OCCIDENTALE* Purdy, Erythea 5: 103. 1897.

Bulb shortly rhizomatous as in *L. pardalinum* but not branching as in that species, or forming clumps; scales overlapping closely:



FIG. 11. —*Lilium superbum*.

stems 6–15^{dm} high: leaves scattering below but in whorls of 5–12 (or more) in the middle of the stem, lanceolate, acute, 5–10^{cm} long: flowers from a few to 15, umbellate or racemose; segments of perianth 3–6^{cm} long, the lower broadly lance-ovate, broadly overlapping at base, the upper two thirds revolute, at length to the pedicel; lower two thirds of segments light orange-red, thickly spotted with roundish black spots, upper one third a deep crimson: style straight, two thirds included in the tube: stamens little longer, spreading but little from the style; anthers oblong, 5^{cm} long, dark red.

California. "Most closely resembles *L. maritimum*, but its larger flowers with long revolute lobes strongly separate it from that species."—PURDY.

38. *L. PARDALINUM* Kellogg, Cal. Acad. Proc. 2: 12. 1863.



FIG. 12.—*Lilium pardalinum*.

- L. Washingtonianum* Domb. Fl. Mag. t. 33. 1872.
- L. Californicum* Domb. Fl. Mag. textu sub t. 33. 1872.
- L. Canadense pardalinum* Bolander, Cal. Acad. Proc. 5: 206. 1872.
- L. Canadense Californicum* Bolander, loc. cit.
- L. pardalinum pallidifolium* Baker, Linn. Soc. Jour. 14: 242. 1874.
- L. puberulum* hort. Leicht. in Baker, loc. cit.
- L. pardalinum Bourgæi* Baker, loc. cit.
- L. Warei* hort. in Purdy, Calif. Florist 2: 67. 1889.

Bulb short rhizomatous, with few, loose, lanceolate, acute scales: stem 6–12^{dm} high: leaves mostly near the middle of the stem in 3–4 whorls of 9–12 leaves each, with a few scattered: flowers 3–10, loose corymbose, on long, nodding pedicels, bright red with orange toward the center, strikingly marked with large purplish-brown spots; perianth segment 5–6^{cm} long, lanceolate, strongly revolute, somewhat papillose: stamens short; anthers

red: style scarcely longer than ovary; capsule oblong, acute angled.

California.

Var. *ANGUSTIFOLIUM* Kellogg in Wats. Am. Acad. Proc. 14:258. 1879.

L. Ræzli Regel, Gartenfl. 321. t. 667. 1870.

L. Canadense Hartwegi Baker, Gard. Chron. 1871:321.

A form with narrow scattered leaves.

39. *L. COLUMBIANUM* hort. in Gard. Chron. 1871:1257.

L. Canadense parviflorum Hook. Fl. Bor. Am. 2:181. 1840.

L. Sayi Nutt. in Duch. Hort. Soc. Par' Jour. II. 5:273. 1871.

L. lucidum Kellogg, Cal. Acad. Proc. 6:144. 1874.

L. parviflorum Holz. U. S. Nat. Herb. Cont. 3:253. 1895.

Bulb perennial, ovoid, small, acute, with lanceolate scales: stem 4.5-9^{dm} high, slender: leaves few, mostly in whorls of four or five, the upper ones frequently scattered, oblanceolate, acute, 4-5^{cm} long: flowers two or three or more, umbellate, on slender nodding pedicels; perianth 4-5^{cm} long, bright orange thickly spotted with small purplish dots, segments lanceolate, reflexed: stamens less than one third the length of the perianth: style scarcely longer than ovary.

Oregon, Washington. Not uncommon in garden collections, where it succeeds fairly well.

40. *L. TALIENSE* Franchet, Jour. Bot. 6:319. 1892.

Slender, nearly 1^m high: stem thinly papillose-scabrous, leafless for a considerable distance near the ground: leaves slightly crowded, linear or narrow linear-lanceolate, obtuse or very acute, scattered, upper ones opposite or whorled, all 1-nerved with the margins very rough, narrowed for a long distance at the base: flowers one or two, whitish, spotted or unspotted; perianth very similar to *L. Lankongense*, but the nectar furrow bare and very smooth.

Yun-nan, China.

41. *L. LANKONGENSE* Franchet, Jour. Bot. 6 : 317. 1892.

Stem 3–6^{dm} high, leafy almost to the ground: leaves narrow lanceolate, 5-nerved, scarcely scabrous along the nerves and margins, crowded, the lower ones wide at the base, half clasping, obtuse, those at the middle and upper parts a little longer, acute, and those at the upper part beneath the inflorescence 3–5-whorled: flowers one or more often two or three, on long peduncles nodding when they first come out; perianth white or purple, spotted with black, with the segments oblong, somewhat incurved above the base, open, nectar furrow papillose: stamens divergent, with yellow anthers: style two to three times longer than the ovary.

Yun-nan, China.

42. *L. AVENACEUM* Fischer in Regel, Gartenfl. 1865 : 290.

L. Martagon Ledeb. Fl. Ross. 4 : 149, ex parte, 1814.

Bulb globose, small, perennial, with very many lanceolate scales: stem 3–6^{dm} high: leaves few, scattered or somewhat whorled, oblanceolate, 7–10^{cm} long: flowers few, nodding, perianth small, 2.5–3.5^{cm} long, revolute, bright reddish-yellow, with a few fine dots, segments lanceolate: ovary half as long as the curved style.

Kamchatka, Manchuria, Kurile islands, Japan.

43. *L. MONADELPHUM* Bieb. Fl. Taur, 1 : 267. 1808.

L. Loddigesianum Schultes f. Syst. Veg. 7 : 416. 1829.

L. Szovitsianum Fisch. & Lall. Ind. Sem. Hort. Petrop. 6 : 58. 1839.

L. colchicum hort. in Planch. Fl. d. Serr. I. 5 : 507. 1849.

Bulb perennial, ovoid, with several lanceolate scales: stem 6–15^{dm} high: leaves 30–50, scattered, linear-lanceolate or oblanceolate, distinctly many-nerved: flowers 2–12, sometimes 20–30, in a raceme, nodding, bracteate, fragrant, yellow, with a few small spots and tinged at the base and tip with purple; perianth segments 6–8^{cm} long, oblanceolate, recurved from the middle, smooth at the base inside: pollen red: ovary half as long as the style; capsule obovoid, umbilicate.

Persia.

Var. LEDEBOURI Baker, Linn. Soc. Jour. 14: 246. 1874.

L. pyreniacum Led. (non Gouan.) Fl. Ross. 4: 151. 1814.

L. Ledebourii Boiss. Fl. Orient. 5: 175. 1867.

Caucasus. Dwarfier than the species, with narrower linear leaves.

44. P. POLYPHYLLUM D. Don in Royle, Ill. Bot. Him. 388. 1839.

L. punctatum Jaquem. in Duch. Soc. Hort. Par. Jour. II. 4: 545. 1870.

Stem 9-12^{dm} high: leaves 40-60, scattered, ascending, the lower oblanceolate, 10-13^{cm}, the upper narrower and linear: flowers 4-10, in a loose raceme, on nodding pedicels, bright yellow with vinous purple spots, fragrant; segments of the perianth 4-5^{cm} long, oblanceolate, revolute from the middle: ovary two thirds as long as the much curved style; capsule obovoid.

Western Himalayas.

45. L. CARNIOLICUM Bernh. in Mert. & Koch. Deutsch. Fl. 2: 336. 1838?

L. Chalcedonicum Linn. Sp. Pl. 434, ex parte, 1762. [Ed. 2.]

L. alpinum Kit. (?), Linnæa 32: 335. 1863.

L. Ponticum K. Koch(?), Linnæa 22: 234. 1849.

Bulb perennial, ovoid, with several lanceolate scales: stem 6-9^{dm} high: leaves 30-40, scattered, lanceolate or linear-lanceolate, the lower 5-7.5^{cm} long, flat, distinctly many-nerved, with ciliate margins: flowers in a small raceme, nodding; perianth 4-5^{cm} long, orange or red, with minute spots, with lanceolate sharply revolute segments which are papillose toward the base: pollen yellow: ovary equaling the clavate style; capsule 4^{cm} long, obtuse angled.

Southern Europe. A fine species, but rare in cultivation.

46. L. MAXIMOWICZII Regel, Ind. Sem. Hort. Petrop. 1866: 26.

L. Leichtlini Hook. f. Bot. Mag. t. 5673. 1867.

L. pseudo-tigrinum Carr. Rev. Hort. 39: 411. 1867.

L. Leichtlini majus Wils. Jour. Hort. 1873: 371.

L. jucundum hort. Bull in Elwes Mon. Gen. Lil. t. 40. 1877.

Bulb perennial, globose, small, with few, wide, acute, thick, closely imbricated scales: stem 6-9^{dm} high, slender, decumbent at the base: leaves 30-40, scattered, linear, ascending, flat,

3-nerved: flowers few, in a loose corymb, on spreading pedicels, either bright lemon-yellow, light orange or red, thickly dotted with dark purple, and tinged with purple on the outside; segments lanceolate, 5–7.5^{cm} long, strongly revolute, thickened at the tip: anthers reddish-brown: ovary slender, one third the length of the curved style.

Japan. There are several good garden varieties, but none deserving the distinction of a botanical name.

47. *L. TESTACEUM* Lindl. Bot. Reg. Misc. 1842: 51.

L. Isabellinum Kunze in Mohl & Schlecht. Bot. Zeit. 1: 609. 1843.

L. peregrinum hort. Germ. in Lem. Fl. d. Serr. I. 1: 192. 1845.

L. excelsum hort. in Seem. in Harting Parad. Vindob. 2. 1845 cir.

L. altissimum hort. in Duch. Soc. Hort. Par. Jour. II. 4: 215. 1870.

Bulb perennial, globose: stem 1.5–2^m high: leaves 60–100, scattered, linear, ascending, 3–5-nerved, the lower ones 7.5–10^{cm} long, gradually becoming smaller upward: flowers 2–10, umbellate, nodding, fragrant, creamy-yellow, with sometimes a few minute reddish dots, slightly papillose; perianth segments 6–7.5^{cm} long, strongly revolute: filaments half as long as the perianth; pollen red: ovary a little more than half as long as the curved style.

Not known in the wild state, and thought to be a hybrid. A fine, stately plant, with delicate, pretty flowers.

48. *L. OCHRACEUM* Franchet, Jour. Bot. 6: 319. 1892.

Bulb small, with few fine lanceolate scales: stem slender, 9–12^{dm} high, bare for a long distance at the base: leaves crowded at the middle, smooth, 1-nerved, or the lower ones slightly 3-nerved, narrowed at the base, subpetiolate, linear-lanceolate or lanceolate, acute or acuminate, all scattered: flowers 1–3, at first nodding, spotted with yellow; perianth tubular for one-third its height, segments oblong, incurved subrevolute; nectar furrow bare, smooth: stamens less than half as long as the perianth; anthers yellow: style three times as long as the ovary.

Yun-nan, China.

49. *L. FARGESI* Franchet, Jour. Bot. 6: 317. 1892.

Bulb ovate, small, with 10–15 fleshy scales: stem slender,

3-10^{dm} high, leafless below, then leaves somewhat crowded, linear, with margins narrowly revolute: flowers sometimes solitary, sometimes 2-10 in a pyramidal raceme, all with long peduncles at the axils of the persistent leaves, nodding when young, horizontal when fully flowered, or nearly erect; perianth small, 4-5^{cm} long, yellow, thickly spotted with purple on the inside, and smooth without; segments lanceolate, immediately expanded, then recurved the whole length, with several fimbriate crests running parallel with the nectar furrow, which is papillose: stamens half the length of the perianth; pollen yellow: style a little longer than the ovary; capsule ovate or nearly square, truncate at the top.

Su-tchuen, China.

50. *L. POMPONIUM* Linn.

Sp. Pl. 302. 1753.

L. angustifolium Miller, Dict. n. 6. 1768. [Ed. 8.]

L. rubrum Lam. & DC. Fl. Fr. 213. 1805. [Ed. 3.]

Bulb perennial, ovoid, with several lanceolate scales: stem 6-9^{dm} high, thick, stiff: leaves 100 or more, scattered, narrow linear, ascending, the lower ones 5-10^{cm} long, the upper ones shorter and narrow linear: flowers 2-15, racemose, nodding, often bracteolate, cinnabar-red, thickly spotted and papillose within, fragrant; perianth segments 4-5^{cm} long, oblanceolate, wide: pollen red: ovary a little shorter than the style; capsule obovoid, umbilicate.



FIG. 13.—*Lilium pomponium*.

Northern Italy and southern France. An excellent lily for garden planting, especially the yellow *L. pomponium aureum* hort.

Var. PYRENAICUM Baker, Linn. Soc. Jour. 14:249. 1874.

L. Pyrenaicum Gouan, Ill. 25. 1773.

L. flavum Lam. & DC. Fl. Fr. 213. 1805. [Ed. 3.]

Pyrenees. A more robust plant, with wider leaves distinctly 3-nerved; flowers larger, yellow.

51. *L. CHALCEDONICUM* Linn. Sp. Pl. 302, ex parte, 1753.

L. miniatum Salisb. Prod. 237. 1796.

L. pomponium DC. in Red. Lil. t. 7. 1802-16.

L. Pyreniacum Baumg. (non Gouan.) Enum. Stirp. Transyl. 1:301. 1816-46.

L. noricum Bernh. in Steud. Nom. ed. ii, 2:44. 1840.

L. gracile Ebel, Zwölfe Tage auf Montenegro 8. 1842.

L. Albanicum Griseb. Spicil. Fl. Rumel. 2:385. 1844.

L. Byzantinum hort. in Duch. Soc. Hort. Par. Jour. II. 5:280. 1871.

L. Jankae Kern. in Oestr. Bot. Zeitschr. 27:402. 1877.

L. Heldreichii Freyn. Flora 63:28. 1880.

Bulb perennial, ovoid, with several lanceolate scales: stem 9-12^{dm} high, stiff: leaves 100 or more, crowded, ascending, 3-5-nerved, with the edges and veins on the lower side distinctly papillose: flowers few, in a raceme, with nodding peduncles; perianth 4-5^{cm} long, bright red, unspotted, or sometimes with minute dots, rarely yellow; segments oblanceolate, much revolute, abundantly papillose: ovary nearly as long as the style.

Greece. A very excellent garden plant.

52. *L. CALLOSUM* Sieb. & Zucc. Fl. Jap. 9:86, t. 41. 1835.

L. pomponium Thunb. (non Linn.) Fl. Jap. 134. 1784.

Bulb small, perennial, with few lanceolate scales: stem 3-9^{dm} high: leaves 30-40, scattered, linear, 3-5-nerved, edges narrowly revolute: flowers 2-12 in a narrow loose raceme, on short nodding pedicels; perianth 2.5-3.8^{cm} long, bright scarlet: filaments short, with scarlet anthers: ovary as long as the clavate style; capsule ovoid.

Japan and the Loo-choo islands.

53. *L. SUTCHUENSE* Franchet, Jour. Bot. 6: 318. 1892.*L. tenuifolium punctatum* Bur. & Franch. in Franch. loc. cit.*L. Chinense* Baroni, Nuov. Giorn. Bot. It. 2: 333. 1895.*L. Chinense atropurpureum* Baroni, op. cit. 335.*L. Biondii* Baroni, op. cit. 337.

Bulb small, broad ovate, scales fleshy, ovate-lanceolate, about 15-18 imbricate: stem slender, 8-10^{dm} high, leafless below: leaves scattered, only slightly crowded, linear, the lower and upper ones one third the length of the others, those in the middle 10-15^{cm} long, smooth: flowers solitary, or terminating 2-4 long stiff branches, nearly erect when young; perianth intensely reddish-orange, often spotted with black; segments much recurved from the middle, papillose on the inside: stamens shorter than the perianth, with the filaments smooth and the pollen golden: style 3-4 times as long as the ovary.

Su-tchuen, China. Shen-si, *legit* Giraldis, *fide* Baroni. "The plant is more robust than *L. tenuifolium*, the leaves equally linear but a little larger, flowers almost twice as large, covered with black spots, style two or three times longer than the ovary."—Franchet.

54. *L. TENUIFOLIUM* Fisch. Ind. Sem. Hort. Gorenk. 8. 1812. [Ed. 2.]*L. linifolium* Hornem. Hort. Hafn. 1: 326. 1813.*L. pumilum* DC. in Red. Lil. t. 378. 1815 cir.*L. puniceum* Sieb. & DeVriese. Ann. Hort. Pays-Bas 23. 1861.*L. tenuifolium stenophyllum* Baker, Linn. Soc. Jour. 14: 251. 1874.

Bulb small, globose, with several lanceolate scales: stem 3-6^{dm} high, slender: leaves 20-50, scattered, very narrow linear, ascending, with revolute margins: flowers 1-20, racemose, on nodding pedicels 5-7.5^{cm} long, rich scarlet, unspotted; perianth segments 2.5-5^{cm} long, much revolute: pollen red: ovary two thirds as long as the slender style.

Siberia. A deserving favorite in gardening, growing readily from seeds or from bulb scales.

55. *L. BOLANDERI* Wats. Am. Acad. Proc. 20: 377. 1885.

Bulb ovate, of numerous lanceolate scales 2.5-3.5^{cm} long: stems 15-90^{cm} high, 1-2-flowered: leaves mostly verticillate and

approximate, oblanceolate, acute, glaucous beneath: flowers horizontal or somewhat nodding, dingy purple or dark brownish-red, becoming somewhat paler, spotted; the segments 3-4^{cm} long, but slightly spreading, rarely at all recurved: anthers 4-6^{mm} long: ovary and style 18-20^{mm} long.

In Red Hills, Humboldt county, California, by Bolander, near Arcata; between Illinois and Smith rivers near state boundary. Allied to *L. parvum* and *L. maritimum*. Rare.

56. *L. GRAYI* Wats. Am. Acad. Proc. 14: 256. 1879.

Leaves lanceolate, 5^{cm} long or less, in whorls of 4 to 8, not acuminate: flowers 4-6^{cm} long, horizontal, often solitary; segments spreading but not recurved, deep reddish-orange, covered throughout with purplish spots.

Virginia and North Carolina. Becoming somewhat common in cultivation. Closely related to *L. Canadense*.

57. *L. PARVUM* Kellogg, Cal. Acad. Proc. 2: 179. 1863.

L. Canadense Walkeri Wood. Phil. Acad. Proc. 1868: 166.

L. Canadense parvum Baker, Linn. Soc. Jour. 14: 241. 1874.

L. parvum luteum Purdy, Erythea 5: 105. 1897.

Bulb of *L. Canadense*: stem 3-4.5^{dm} high: leaves partly whorled, or the upper ones scattered: flowers few to many, upright or nearly so, bright reddish-orange, thickly dotted; perianth segments 2.5-4^{cm}



FIG. 14.—*Lilium parvum*.

long, acute, more or less reflexed above the middle: ovary half as long as style.

Sierra Nevada mountains, California.

58. *L. NITIDUM* hort. Bull. in Baker, Gard. Chron. 1880:198.

Bulb oblong, subrhizomatous, with crowded, appressed, lanceolate scales: stem 4.5^{dm} long below the inflorescence, stout, bearing four whorls of leaves and several additional scattered ones: leaves up to 20 in a whorl, lanceolate: panicle deltoid, 15-25^{cm} long, of 10-20 flowers; lower pedicels 5-7.5^{cm} long, spreading with cernuous tips in the flowering stage, arcuate ascending in the fruiting stage; perianth bright yellow, with copious small red-brown dots, 4^{cm} long; segments lanceolate, under 13^{mm} broad, permanently connivent in the cup in the lower half, revolute in the upper half: filaments above 2.5^{cm} long; anthers oblong, bright yellow: ovary oblong, 13^{mm} long; style as long as the ovary, much curved.

This species is not known in our gardens, and is hardly represented in our herbaria. It should have further study.

59. *L. MARITIMUM* Kellogg, Cal. Acad. Proc. 6:140. 1874.

L. Canadense parviflorum Bolander in Wats. Am. Acad. Proc. 14:256. 1879.

Bulb small, conical: stem rather low: leaves usually scattered, narrow, often obtuse: flowers solitary or few, horizontal, 3-5^{cm} long, deep reddish-orange, spotted below: segments recurved above: style and stamens short; anthers 4^{mm} long: capsule long and narrow.

60. *L. CANADENSE* Linn. Sp. Pl. 303. 1753.

L. penduliflorum DC. in Red. Lil. t. 105. 1802-16.

L. pulchrum Salisb. Prod. 237. 1796.

L. pendulum Spae Mem. Gen. Lis. 28. 1845.

L. Canadense minus Wood, Phil. Acad. Proc. 1868:166.

Bulb annual, rhizomatous, with short, thick, obtuse scales: stem 3-12^{dm} high, slender, erect: leaves oblanceolate, acute, 7.5-10^{cm} long, 5-7-nerved, usually mostly in whorls: flowers one to several, somewhat umbellate; perianth 5-9^{cm} long, wide funnel-shaped, in various shades of yellow, orange and red with

numerous dark spots; segments oblanceolate, more or less revolute above the middle: filaments short: ovary a little shorter than the style; capsule conical.

Eastern North America from New Brunswick to Georgia, and west to the Mississippi river. A good species in cultivation. Varies considerably in degree of revoluteness and in color. Those with red flowers may take the name *L. CANADENSE RUBRUM* Britton (Torr. Bot. Bull. 17: 125. 1890). Bright yellow sorts may be called *L. CANADENSE FLAVUM* hort. (nom. nov.).

61. *L. PURDYI*, nom. nov.

L. Bakeri Purdy, *Erythea* 5: 104. 1897.

Bulb ovoid, exactly as in *L. Columbianum*: stem 6–18^{dm} high, rather stout: leaves lanceolate, mostly in whorls: inflorescence racemose; flowers few to ten, horizontal, orange-red, thickly dotted with maroon, very fragrant, buds nodding; segments of perianth 3^{cm} long, acute, lower half of segments forming a closely constricted tube from which upper half spreads rotately, tips not recurved: stamens exserted, a little shorter than the segments, not spreading much from the straight style, which they exceed a little.

Washington and British Columbia.

62. *L. CORDIFOLIUM* Thunb. Linn. Soc. Trans. 2: 332. 1794.

Hemerocallis cordata Thunb. Fl. Jap. 143. 1784.

Saussurea cordifolia Salisb. Linn. Soc. Trans. 8: 11. 1807.

L. Glehni F. Schmidt? Reis. Amurl. 187 (Acad. Imp. Sci. St. Petr. Mem. xiii, no. 2). 1868.

Bulb perennial, globose, cespitose, with scales thicker, more rugose, and less regular than in *L. giganteum*: stem 9–12^{dm} high: leaves at the base cordate, long-petiolate, tinged with red, those on the stem cordate, ovate, petiolate: flowers 3–10, in a short raceme; perianth narrow, funnel-shaped, 10–15^{cm} long; segments oblanceolate, white, with large violet-brown patches on the lower half of the outer segments.

Japan. Sometimes seen in collections, but difficult of cultivation.

63. *L. GIGANTEUM* Wallich. Tent. Fl. Nep. 21, t. 12-13. 1824.

L. cordifolium D. Don. (non Thunb.) Prod. Nep. 52. 1825.

Bulb perennial, globose, cespitose: stem 1.5-3^m high: radical leaves green; cauline leaves 12-20, scattered, ovate, acute, deeply cordate at the base, reticulate veined, petiolate, gradually smaller above: flowers 12-20, in a raceme, slightly nodding, white, tinged with purple inside and green outside, fragrant, 12-15^{cm} long: stamens less than one-third the length of the perianth; anthers yellow: ovary cylindrical.

Himalayas. Found in large collections, but not generally successful in cultivation.

64. *L. MIRABILE* Franchet, Jour. Bot. 6: 310. 1892.

Nearly 1.2^m high, slender: leaves thin, paperlike, unspotted, all alternate, cordate, broad, ovate, acuminate: inflorescence centrifugal: flowers 7-15, nearly horizontal; perianth white, tinged with violet on the margins outside, narrowly tubular, the tips moderately opened, 16-18^{cm} long, with the segments oblong-linear, much attenuated: stamens scarcely exceeding half the perianth, with short anthers and yellow pollen: ovary 2.5^{cm} long; style 6-7^{cm} long, slender.

Su-tchuen, China.

BURLINGTON, VERMONT.

INDEX TO NAMES.

abschasicum hort. = *longiflorum*, 242
Albanicum Griseb. = *Chalcedonicum*, 352
Alexandræ = *Japonicum Alexandræ*, 244
alpinum Kit. = *Carniolicum*, 349
alternans Sieb. = *elegans*, 251
altissimum hort. = *testaceum*, 350
andinum Nutt. = *Philadelphicum*, 248
angustifolium Miller = *pomponium*, 351
atrosanguineum Sieb. = *elegans*, 251
atrosanguineum hort. = *bulbiferum*, 250
aurantiacum Sieb. = *bulbiferum*, 250
aurantiacum Dum. deC. = *croceum*, 251
aurantiacum Paxt. = *elegans*, 251
aurantium Haw. = *croceum*, 251

auratum Lindl., 341
autumnale Lodd. = *superbum*, 345
avenaceum Fischer, 348
Bakerianum Coll. & Hems., 253
Bakeri Purdy = *Purdyi*, 356
Bartramii Nutt. = *Washingtonianum*, 247
Batmanniæ = *elegans fulgens*, 252
Batisua Hamilt. = *Wallichianum*, 240
Belladonna hort. = *Japonicum roseum*, 244
biligulatum hort. = *bulbiferum*, 250
Biondii Baroni = *Sutchuense*, 353
Bloomerianum Kell. = *puberulum*, 343
Bloomerianum ocellatum Kell. = *puberulum*, 343

- Bolanderi** Watson, 353
Broussartii Morren = *speciosum*, 342
Brownii Poit. = *Japonicum Brownii*, 244
bulbiferum Linn., 250
bulbiferum Thunb. = *elegans*, 251
bulbiferum DC. = *croceum*, 251
Buschianum Lodd. = *concolor sinicum*, 249
Byzantinum Steud. = *candidum*, 245
Byzantinum hort. = *Chalcedonicum*, 352
Californicum Domb. = *pardalinum*, 346
Californicum hort. = *puberulum*, 343
callosum Sieb. & Zucc., 352
Canadense Linn., 355
Canadense Thunb. = *medeoloides*, 248
Canadense Californicum Bol. = *pardalinum*, 346
Canadense flavum hort., 356
Canadense Hartwegii Baker = *pardalinum angustifolium*, 347
Canadense minus Wood = *Canadense*, 355
Canadense pardalinum Bol. = *pardalinum*, 346
Canadense parviflorum Bol. = *maritimum*, 355
Canadense parviflorum Hook. = *Columbianum*, 347
Canadense parvum Baker = *parvum*, 354
Canadense puberulum Torr. = *puberulum*, 343
Canadense rubrum Brit., 356
Canadense Walkeri Wood = *parvum*, 354
candidum Linn., 245
candidum Thunb. = *longiflorum*, 242
Carniolicum Bernh., 349
Carolinianum Cates. = *Catesbæi*, 253
Carolinianum Michx. = *superbum Carolinianum*, 345
Catesbæi Walt., 253
Catesbæi hort. = *Philadelphicum*, 248
Cattaneæ Vis. = *Martagon*, 344
Chalcedonicum Linn., 352
Chalcedonicum Linn. p. p. = *Carniolicum*, 349
Chinense Baroni = *Sutchuense*, 353
Chinense atropurpureum Baroni = *Sutchuense*, 353
Claptonense hort. = *primulinum*, 246
colchicum hort. = *monadelphum*, 348
Columbianum hort., 347
concolor Salisb., 249
concolor Buschianum Baker = *concolor sinicum*, 249
concolor partheneion, 249
concolor pulchellum, 249
concolor sinicum Hook., 249
cordifolium Thunb., 356
cordifolium D. Don. = *giganteum*, 357
coridion Sieb. & DeV. = *concolor partheneion*, 249
coruscans hort. = *elegans*, 252
croceum Fuchs, 251
dauricum Gawl. = *Philadelphicum*, 248
davuricum Baker = *elegans*, 251
Davidi Duch., 249
Delavayi Franch., 243
Dexteri Hovey = *auratum*, 341
Duchartrei quid? = *speciosum*, 342
elatum Salisb. = *bulbiferum*, 250
elegans Thunb., 251
elegans alutaceum Baker & Dyer, 252
elegans Armeniacum = *elegans alutaceum*, 252
elegans atosanguineum Baker & Dyer, 252
elegans bicolor Moore, 252
elegans citrinum = *elegans alutaceum*, 252
elegans fulgens Baker 252
elegans plenus Waugh 252
elegans Wallacei Waugh 252
Elisabethæ Leicht = *Japonicum roseum*, 244
erectum Baker = *tigrinum* 254
excelsum hort. = *testaceum*, 350
eximium Court. = *longiflorum eximium*, 242
eximium hort. = *speciosum*, 342
eximium Wilsoni = *longiflorum eximium*, 242
Fargesii Franch., 350
flavum LaM. = *pomponium Pyrenaicum*, 352
Formosum Franch., 250
Fortuni Lindl. = *tigrinum*, 253
fulgens Morren = *elegans fulgens*, 252
giganteum Wall., 357
glabrum Spreng. = *Martagon*, 344
Glehni F. Schmidt = *cordifolium*, 356
gracile Ebel. = *Chalcedonicum*, 352
Grayi Watson, 354
hæmatochroum Lem. = *elegans*, 251
Hansoni Leicht. = *maculatum*, 344
Harrisi hort. = *longiflorum eximium*, 242
Heldreichii Freyn. = *Chalcedonicum*, 352
Henryi Baker, 340
hirsutum Mill. = *Martagon*, 344
Hookeri Baker = *Fritillaria Hookeri*
Humboldtii Roetz. & Leicht. = *puberulum*, 343
humile Mill. = *bulbiferum*, 250
Isabellinum Kunze = *testaceum*, 350
Jama-juri Sieb. & DeV. = *longiflorum eximium*, 242
Jankæ Kern. = *Chalcedonicum*, 352

- Japonicum** Thunb., 243
Japonicum D. Don. = **Wallichianum**, 240
Japonicum Alexandræ Lut., 244
Japonicum Brownii Nich., 244
Japonicum roseum hort., 244
lucundum hort. = **Maximowiczii**, 349
Kamtschaticensis Linn. = **Fritillaria Kamtschaticense**
Kratzeri Duch. = **speciosum**, 342
Krameri hort. = **Japonicum roseum**, 244
Krameri Barrianum Baker = **Japonicum roseum**, 244
Kramerianum Hook. = **Japonicum roseum**, 244
lancifolium hort. = **speciosum**, 342
lancifolium hort. Bouch. = **bulbiferum**, 250
lancifolium Thunb., not identified
Lankongense Franch., 348
lateritium hort. = **bulbiferum**, 250
latifolium Link = **bulbiferum**, 250
Ledebouri Boiss. = **monadelphum** **Ledebouri**, 349
Leichtlini Hook. = **Maximowiczii**, 349
Leichtlini majus Wils. = **Maximowiczii**, 349
Leopoldi hort. = **tigrinum**, 254
lilacinum Leicht., not identified
linifolium Hornem. = **tenuifolium**, 353
Loddigesianum Schultes = **monadelphum**, 348
longiflorum Thunb., 242
longiflorum Wall. = **Wallichianum**, 240
longiflorum eximium Nich., 242
Lowi Baker, 245
lucidum Kell. = **Columbianum**, 347
maculatum Thunb., 344
maritimum Kell., 355
Martagon Linn., 344
Martagon Ledeb. = **avenaceum**, 348
Martagon Walt. = **superbum**, 345
Martagon dalmaticum Maly. = **Martagon**, 344
Martagonum St. Lag. = **Martagon**, 344
Maximowiczii Regel, 349
medeoloides Gray, 248
Metzii Steud. = **Neilgherrense**, 241
Michauxianum Schultes = **superbum**, 345
Michauxii LaM. = **superbum**, 345
Milleri Schultes = **Martagon**, 344
miniaturum Salisb. = **Chalcedonicum**, 352
mirabile Franch., 357
monadelphum Bieb., 348
monadelphum Ledebouri Baker, 349
montanum Nelson = **Philadelphicum**, 248
myriophyllum Franch., 252
nanum Klotsch = **Nepalense**, 246
Neilgherrense Coll. & Mem. = **primulinum**, 246
Neilgherrense Wight, 241
Neilgherricum hort. = **Neilgherrense**, 241
Nepalense D. Don., 246
Nepalense Coll. & Hems. = **Lowi**, 245
nigrum Sieb. = **Fritillaria Kamtschaticense**
nitidum hort., 355
noricum Bernh. = **Chalcedonicum**, 352
occidentale Purdy, 345
ochraceum Franch., 350
ochroleucum Wall. = **Nepalense**, 246
ochroleucum The Garden = **sulphureum**, 241
odorum Planch. = **Japonicum**, 243
oxypetalum Baker, 340
papilliferum Franch., 340
pardalinum Kell., 346
pardalinum angustifolium Kell., 347
pardalinum Bourgei Baker = **pardalinum**, 346
pardalinum pallidiflorum Baker = **pardalinum**, 346
Parryi Watson, 247
partheneion Sieb. & DeV. = **concolor partheneion**, 249
parviflorum Holz. = **Columbianum**, 347
parvum Kell., 354
parvum luteum Purdy = **parvum**, 354
penduliflorum DC. = **Canadense**, 355
pendulum Spæ = **Canadense**, 355
Pennsylvanicum Gawl. = **Philadelphicum**, 248
peregrinum Mill. = **candidum**, 245
peregrinum hort. = **testaceum**, 350
Persicum Fischer, not identified
Philadelphicum Linn., 248
Philadelphicum wansharaicum hort. = **Philadelphicum**, 248
Philadelphicum Thunb. = **elegans**, 251
Philippense Baker, 240
pictum hort. = **elegans**, 252
polyphyllum D. Don., 349
pomponium Linn., 351
pomponium DC. = **Chalcedonicum**, 352
pomponium Thunb. = **callosum**, 352
pomponium Lour. = **tigrinum**, 253
pomponium Pyrenaicum Baker, 352
Ponticum Koch = **Carniolicum**, 349
præcox hort. = **speciosum album**, 343
primulinum Baker, 246
pseudo-tigrinum Carr. = **Maximowiczii**, 349
puberulum Duch., 343
puberulum hort. = **pardalinum**, 346
pubescens Bernh. = **bulbiferum**, 250

- pulchellum Fisch. = concolor pulchellum, 249
 pulchrum Salisb. = Canadense, 355
 pumilum DC. = tenuifolium, 353
 pumilum hort. = croceum, 251
 punctatum Jacq. = polyphyllum, 349
 punctatum hort. = speciosum, 342
 puniceum Sieb. & DeV. = tenuifolium, 353
Purdyi Waugh, 356
 purpureo-croceum Bosc. = bulbiferum, 250
 pygmæum Leicht., not identified
 pyreniacum Baumg. = Chalcedonicum, 352
 pyreniacum Gouan = pomponium, 352
 pyreniacum Led. = monadelphum Ledebouri, 349
 Robinsonianum hort. = puberulum, 343
 Roezlei Regel = pardalinum angustifolium, 347
 roseum Wall. = Fritillaria Thompsoniana
rubellum Baker, 246
 rubescens Watson = Washingtonianum purpureum, 247
 rubrum LaM. & DC. = pomponium, 351
 sanguineum hort. in Lindl. = bulbiferum, 250
 sanguineum hort. in Vilm. = elegans, 251
 Sayi Nutt. = Columbianum, 347
 scabrum Moench. = bulbiferum, 250
 Sibericum Schlecht. = bulbiferum, 250
 sinense hort. = tigrinum, 253
 sinicum Lindl. = concolor sinicum, 249
 speciosissimum hort. = longiflorum, 242
 speciosum Andr. = tigrinum, 253
speciosum Thunb., 342
speciosum album hort., 343
speciosum rubrum hort., 343
 speciosum Sieb. = longiflorum, 242
 speciosum imperiale hort. = auratum, 342
 spectabile Link. = Philadelphicum, 248
 spectabile Salisb. = Catesbæi, 253
sulphureum Baker, 241
superbum Linn., 345
 superbum Thunb. = speciosum, 342
superbum Carolinianum Chapm., 345
Sutchuense Franch., 353
 Szovitsianum Fisch. = monadelphum, 348
 Takesima hort. = longiflorum, 242
Taliense Franch., 347
 Tametomo Zucc. & Spæ = speciosum, 342
tenuifolium Fisch., 353
 tenuifolium punctatum Bur. & Franch. = Sutchuense, 353
 tenuifolium stenophyllum Baker = tenuifolium, 353
testaceum Lindl., 350
 Thompsonianum Lindl. = Fritillaria Thompsoniana
 Thunbergianum Schultes = elegans, 251
tigrinum Andr., 253
tigrinum plenescens Waugh, 254
tigrinum splendens Leicht., 254
 triceps Klotsch = Nepalense, 246
 tubiflorum Wight = Neilgherrense, 241
 Ukeyuri hort. = Japonicum roseum, 244
 umbellatum hort. = elegans, 251
 umbellatum Pursh = Philadelphicum, 248
 venustum Kunth = elegans, 251
 versicolor Salisb. = Martagon, 344
 verticillatum Gilib. = Martagon, 344
 verticillatum Willd. = Philadelphicum, 248
 vestale Mast. = speciosum, 342
 Wallacei Baker = elegans Wallacei, 252
Wallichianum Schultes, 240
 Wallichi superbum hort. = sulphureum, 241
 Wallichianum superbum hort. = sulphureum, 241
 Wallichianum Wight = Neilgherrense, 241
 Warei hort. = pardalinum, 346
Washingtonianum Kell., 247
 Washingtonianum Domb. = pardalinum, 346
Washingtonianum purpureum Mast., 247
 Wilsoni hort. = elegans, 252
 Wilsoni hort. in Moore = bulbiferum, 250
 Wittei Suring. = auratum, 341
Yunnanense Franch., 243